

William Chargin

git.io/wc • wchargin

Carnegie Mellon University School of Computer Science GPA 4.0

Please visit my website at git.io/wc for an interactive résumé, and more up-to-date and detailed project descriptions.

Experience

Google Brain

Mountain View, CA

Software Engineering Intern

May–August 2017

- Worked on the TensorFlow team developing TensorBoard, an open-source framework that helps developers and researchers to understand, debug, and improve their machine learning models.
- Designed and implemented a rich plugin system to enable all users to write data visualizations tailor-made for their purposes. This system is already used by external contributors. Work spans web frontend, Python backend, and core TensorFlow API design.

Khan Academy

Mountain View, CA

Software Developer Intern (infrastructure)

May–August 2016

- Extended the site's core content system to enable creating and curating content separately for different languages and locales, as opposed to simply translating existing content.
- Conducted extensive testing of correctness, performance, memory, and cost to ensure a smooth transition upon launch.
- Improved tooling to help translators, content creators, and international teams work effectively with the new content system.

Khan Academy

Mountain View, CA

Software Developer Intern (frontend and backend)

June–September 2015

- Frontend, backend: added CMS support for thumbnail upload, compositing, storage, and usage; implemented streaks (à la Duolingo).
- Backend: implemented hot loading of JSX and CSS/Less for development; sped up internal content publish process by 57%.

Cal Poly Computer Science Department

San Luis Obispo, CA

Instructional Student Assistant, Fundamentals of Computer Science II

Fall 2014–Spring 2015

- Designed, implemented, tested, and documented a flexible and extensible automated grading system. (See *Projects* below.)

Selected projects

Assorted interesting course projects

Java

- An expanded version of *Scrabble* (core logic and a polished GUI); an extensible data visualization system with plugin support.
- More details (technical descriptions, documentation, screenshots, videos) at wchargin.github.io/projects/cmu-15-214.

Microcomputer assembler and simulator

JavaScript

- Web-based interactive simulator for the LC-3, a teaching microcomputer, to supersede the standard Windows application.
- Simulator includes accurate instruction cycle, debugging tools, polling-based and interrupt-driven I/O, and file upload/download.
- Released as free software at wchargin.github.io/lc3web. Used by more than 2,000 students of Cal Poly's CPE 225 course.

Automated grading system

Bash, Java

- Automatically tests and grades student work for style and correctness, according to customizable and extensible grading modules.
- Grades and archives all student work at assignment due dates, and immediately emails students with helpful feedback.
- Includes tool to efficiently manually investigate failing submissions, to ensure that all grades are accurate.

Model United Nations debate moderation system

Java

- Created and deployed an application system that unifies the tools that chairs need to aptly moderate debates.
- Implemented networking across multiple computers to maximize efficiency; separate modes for head chair, director, and rapporteur.
- Deployed system at multiple conferences; system used by dozens of chairs and hundreds of delegates.
- Released as free software; available at wchargin.github.io/kiosk/.

Selected skills and academic honors

Proficient or better in: Python, Java, C, Haskell; JavaScript, React; Google App Engine; Git; L^AT_EX, TikZ, Blender 3D.

University Honors Program, Cal Poly SLO. Honors Public Speaking: Best Informative Speaker, Best Persuasive Speaker.

Grade 12 Valedictorian. National Merit Scholar. National AP Scholar. California Scholarship Federation Sealbearer. Inter-Departmental Award (inaugural; created for me). Best Mandarin I Student.

Grade 11 Most Outstanding Math and Science Student. Best Junior in { Math, Spanish, History }.